Generating and Visualizing PhysBAM Data
The Basics

- Rasterization Software
- Cross Platform
- Fast
  - Hardware Accelerated
- Basic Features
  - Basic Lighting
  - Basic Shading
  - Texture Mapping
The Basics

- Set of simple commands
  - `glLight`
  - `glBegin...glNormal...glVertex...glEnd`
  - `glTranslate`
  - `glRotate`
PhysBAM

- Three Viewers
- One per dimension
2D Viewer
Commands

- Playing
  - “p” play
  - “s” step
  - “S” step back
  - “r” restart
  - “z” end
  - “g” goto
  - “ctrl+d” capture
Commands

- Visualization
  - “V” show velocity
  - “d” show smoke
  - “6” show grid
  - “-” decrease velocity size
  - “=” increase velocity size
  - “ctrl+h” slice mode
  - “[“ and “]” increment and decrement slices
  - “\” change slice axis
Smoke

- Run
  - scale – resolution of an nxn grid
  - e – last frame of a simulation
  - restart – frame to restart the simulation from
  - 3d – run the simulation in three dimensions
- Output to the output directory
How to Add a Sphere

• Files to modify
  • SMOKE_EXAMPLE{.h,.cpp}
• Use a SPHERE<TV> object
• Works with other basic geometry
How to Add a Sphere
How to Simulate Particles

- Files to modify
  - SMOKE_EXAMPLE{.h,.cpp}
  - SMOKE_DRIVER.cpp
- Stored as an array of positions
How to Modify the viewer

- How to add visualization
- Files to modify
  - main.cpp

Can use OPENGL_COMPONENTS
How to Add Particles
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